NSLS TECHNICAL NOTE BROOKHAVEN NATIONAL LABORATORY	NUMBER **539**
AUTHOR **Y. N. TANG**	DATE 9/27/05
TITLE **Reading Devices on bnlls3 and Other Workstations**	

Recently we have developed an RPC-based device-read server, an RPC-based client library and a set of device-read programs, which let users on other computers (especially on bnlls3) read real-time device data in our control system. The server is running on lsb10008 and the programs reside in /mnts/datafiles/sys.programs/bin on bnlls3. All programs write the readback values to the standard output, which can be redirected to a file, or piped to another program.

It may help users who want to read real-time data from NSLS control system.

1. Program getrdb

getrdb (nocal) devName1 devName2 devName3…

- **Description**: ***getrdb*** reads the readbacks of a set of devices from micros and displays them on the **standard output**.
- ***nocal*** is an optional flag. The readbacks are calibrated and presented in engineering units by default. If the raw counts are preferred, use the ***nocal*** option. ***nocal*** stands for no-calibration.
- ***devName1 devName2 devName3…*** are device names in our control system. Up to 100 devices may be read in one command.
- **Examples:**
  - **getrdb xrcurr xamphrmode uvcurr uamphrmode**
    The output could be: **200.2000 1 0.1000 0 ---** the Xray beam current is 200 ma, the value of xamphrmode is 1 (beam available); VUV ring beam current is 0.1 ma and beam is not available because uamphrmode is 0.

  - **getrdb nocal x1h2 x1h5 x1h13**
    The output could be: **-192 -345 2340** --- The readbacks of the three trims. If the **nocal** option is omitted, the output will be calibrated.

2. Program getsetp

getsetp (nocal) devName1 devName2 devName3…

- **Description**: ***getsetp*** reads the setpoints of a set of devices from micros and displays them on the **standard output**.
- ***nocal*** is optional. The setpoints are calibrated and presented in engineering units by default. If the raw counts are preferred, use ***nocal*** option. ***nocal*** stands for no-calibration.
- ***devName1 devName2 devName3…*** are device names in our control system. Up to 100 devices may be read in one command.
- **Examples:**
  - **getsetp nocal x1h2 x1h5 x1h13**
    The output could be: **-195 -338 2349** --- The setpointss of the three trims. If the ***nocal*** option is omitted, the output will be calibrated.

3. Program getstate

getstate devName1 devName2 devName3…

- **Description**: ***getstate*** reads the states (on/off, open/close…) of a set of devices from micros and displays the returned state values on the **standard output**. Usually, 1 means off and 2 means on. For Xray ring beamline shutters, 1 means close, 2 open; while for VUV beam lines, 1 means open, and 2 close.
- ***devName1 devName2 devName3…*** are device names in our control system. Up to 100 devices may be read in one command.
- **Examples:**
  - **getstate x29shuta x29shutb x29shtc**
    If the output is **1 2 1,** x29 shutter a is closed, b is open, and c is closed.

4. Program getcmd

getcmd devName1 devName2 devName3…

- **Description**: ***getcmd*** reads the commands (on/off, open/close…) sent down by applications to a set of devices and displays the commands on the **standard output**. Usually, 1 means off and 2 means on.
- ***devName1 devName2 devName3…*** are device names in our control system. Up to 100 devices may be read in one command.
- **Examples:**
  - **getcmd xdfbkctlh xdfbkctlv**
    If the output is **1 2,** the OFF and ON commands have been sent to the Xray ring horizontal and vertical digital feedback systems, respectively.

5. Program getbvac

getbvac devName1 devName2 devName3…

- **Description**: ***getbvac*** reads the beamline vacuum pressures and displays them on the **standard output**. The pressure values are always calibrated.
- ***devName1 devName2 devName3…*** are device names in our control system. Up to 100 devices may be read in one command.
- **Examples:**
  - **getbvac x8vac x9vac**
    The readbacks could be 1.2e-10 3.4e-9.

6. Program getvac

getvac devName1 devName2 devName3…

- **Description**: ***getbvac*** reads the vacuum pressures and displays them on the **standard output**. The pressure values are always calibrated.
- ***devName1 devName2 devName3…*** are device names in our control system. Up to 100 devices may be read in one command.
- **Examples:**
  - **getvac x1dp1 x1d3ip x1d1ip x1d6ip**
    The readbacks could be 1.2e-10 3.4e-9 9.456e-9 8.24e-10

If there are bugs and problems in these programs, please call me at 7022.